

ABSTRACT

A method and apparatus for a VOA with improved wavelength-dependent optical losses is provided. The primary elements of this improved VOA are a package, a movable structure with a reflecting surface, and a collimator. The collimator is comprised of various optical components including a ferrule holding at least two waveguides and a lens. Selecting a ferrule and a lens such that the plane containing the end of the ferrule and the ends of the waveguides is not parallel to the facing end of the lens, it is possible to determine positions and axial orientations of the ferrule with respect to the lens which result in minimal wavelength-dependent optical losses. By geometrically configuring the optical components of the collimator in this way, and subsequently positioning and axially orienting the collimator and movable structure to minimize wavelength-dependent losses, a VOA with minimal wavelength-dependent optical losses can be constructed.